UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,259	10/01/2001	Richard C. Rose	2000-0572	5143

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MR. S. H. DWORETSKY
AT&T CORP ROOM 2A-207
ONE AT&T WAY
BEDMINSTER, NJ 07921

EXAMINER
WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/966,259	ROSE ET AL.
		Examiner	Art Unit
		James S. Wozniak	2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 July 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-32</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-32</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>01 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 7-05)   Office Action Summary   Part of Paper No./Mail Date 20050922

DETAILED ACTION

Response to Amendment

1.   In response to the office action from 4/6/2005, the applicant has submitted an

amendment, filed 7/6/2005, arguing to traverse the art rejection based on the limitation regarding

speech recognition model compensation *(Amendment, Page 2)*. The applicant's arguments have

been fully considered but are moot with respect to the new grounds of rejection in view of Gong

(U.S. Patent: 6,418,411).

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

3.   **Claims 1-4, 13, 15, 18-19, 21-24, 27, and 29** are rejected under 35 U.S.C. 102(e) as

being anticipated by Gong *(U.S. Patent: 6,418,411)*.

With respect to **Claims 1, 13, and 21**, Gong discloses:

A memory that stores data related to at least one of a communication device, transducer,

vocal information and acoustic environmental data *(speech recognition system process of*

recording environmental noise, speaker, and microphone characteristics that would inherently require a memory for storing such data for speech recognition processing, Col. 1, Line 55- Col 2, Line 61);

A controller coupled with the memory that determines the data of the at least one communications device, transducer, vocal information and acoustic environmental data, and then compensates at least one speech recognition model to reflect the data *(speech recognition model compensation, Col. 1, Line 55- Col. 2, Line 61; and Fig. 1, Elements 12 and 20)*;

A speech recognizer that recognizes speech utterances by using the at least one compensated speech recognition model *(Col. 2, Lines 26-61; and Fig. 1, Element 21)*.

With respect to **Claims 2 and 22**, Gong recites:

The transducer data includes a distortion value related to a transducer of a mobile communications device *(microphone noise compensation, Col. 1, Lines 54-64; and cellular phone microphone, Col. 1, Lines 15-34)*.

With respect to **Claims 3 and 23**, Gong discloses:

The data related to the acoustic environmental data includes a background noise value that corresponds to an operating environment of a mobile communications device *(recording background noise, Col. 2, Lines 26-61; and cellular phone acoustical environment, Col. 1, Lines 15-34)*.

With respect to **Claim 4**, Gong discloses:

The vocal information includes a distortion value related to an end user associated with a mobile communications device *(determining the gender of a cellular phone user for speaker adaptation, Col. 1, Line 15- Col. 2, Lines 11-25)*.

With respect to **Claims 15 and 29**, Gong recites:

The acoustic environmental data is determined using at least one microphone in an end

user's environment *(Col. 1, Lines 54-64)*.

With respect to **Claim 18**, Gong discloses:

The vocal information represents a variability that exists in vocal tract shapes among

speakers of a group *(gender, Col. 2, Lines 11-25)*.

With respect to **Claim 19**, Gong discloses:

The controller communicates with a memory that stores various acoustic environmental

models and various features of a specific type of mobile device *(speech recognition system*

process of recording environmental noise, speaker, and microphone characteristics that would

inherently require a memory for storing such data for speech recognition processing, Col. 1,

Line 55- Col 2, Line 61; microphone noise compensation, Col. 1, Lines 54-64; and cellular

phone microphone, Col. 1, Lines 15-34).

With respect to **Claim 24**, Gong recites:

The data of the at least one of a communication device, transducer, vocal information and

acoustic environmental data is received from a cellular telephone *(acoustic environmental data*

received from a cellular telephone input (microphone), Col. 1, Line 15- Col. 2, Line 61).

With respect to **Claim 27**, Gong recites:

The speech recognition model is a Hidden Markov Model *(Col. 1, Lines 37-42)*.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   **Claims 5, 6, and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong

in view of Kanevsky et al *(U.S. Patent: 6,442,519)*.

With respect to **Claim 5**, Gong teaches the speech recognition model adaptation system

utilizing microphone, speaker, and environmental noise data, as applied to Claim 1. Gong does

not teach that the aforementioned data is provided by a personal computer, however Kanevsky

teaches a personal computer used to receive speech data *(Col. 4, Lines 18-46)*.

Gong and Kanevsky are analogous art because they are from a similar field of endeavor

in speech recognition model adaptation. Thus, it would have been obvious to a person of

ordinary skill in the art, at the time of invention, to modify the teachings of Gong with the use of

a personal computer for receiving speech data as taught by Kanevsky in order to expand the

amount of speech data available for improved speech recognition by utilizing a personal

computer connected to a network to receive speaker data *(Kanevsky, Col. 3, Lines 10-35)*.

With respect to **Claims 6 and 25**, Kanevsky further teaches a PDA for receiving speech

data *(Col. 4, Lines 18-46)*.

6.   **Claims 7-8 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong

in view of Hunt et al *(U.S. Patent: 6,094,476)*.

With respect to **Claims 7 and 26**, Gong teaches the speech recognition model adaptation

system utilizing microphone, speaker, and environmental noise data, as applied to Claims 1 and

21. Gong does not teach that the aforementioned data is provided through a satellite

communications system, however Hunt teaches such a satellite communications system *(Col. 4,*

Lines 16-23).

Gong and Hunt are analogous art because they are from a similar field of endeavor in

speech recognition model adaptation. Thus, it would have been obvious to a person of ordinary

skill in the art, at the time of invention, to modify the teachings of Gong with the use of a

satellite communications system as taught by Hunt in order to provide a practical variation of a

cellular phone network that allows a user to access voice mail through recognized speech

commands *(Hunt, Col. 4, Lines 16-33)*.

With respect to **Claim 8**, Gong teaches the use of an HMM for speech recognition as

applied to claim 27, while Hunt further teaches a speech recognizer located at a server *(Col. 11,*

Lines 43-47).

7.   **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gong in view of

Cilurzo et al *(U.S. Patent: 6,434,526)*, and further in view of Sönmez et al *(U.S. Patent:*

5,745,872).

With respect to **Claim 11**, Gong teaches the speech recognition model adaptation system

utilizing microphone, speaker, and environmental noise data, as applied to Claims 1 and 21.

Gong does not teach personal user account information that includes administrative information, however Cilurzo teaches such account information *(Col. 5, Lines 27-64)*.

Gong and Cilurzo are analogous art because they are from a similar field of endeavor in speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gong with the user account information taught by Cilurzo in order to provide multiple users with access to a network speech recognizer having a capacity that can be expanded dynamically *(Cilurzo, Col. 2, Lines 22-51)*.

Gong in view of Cilurzo do not specifically teach a probability value relating to a user being in a particular background environment, however Sönmez discloses such a probability value *(Col. 4, Lines 22-67)*.

Gong, Cilurzo, and Sönmez are analogous art because they are from a similar field of endeavor in speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Gong in view of Cilurzo with the environmental probability value as taught by Sönmez in order to adapt speech data to secondary environments *(Sönmez, Col. 2, Lines 29-36)*.

8.   **Claims 9, 12, 20, 28, and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gong in view of Cilurzo et al *(U.S. Patent: 6,434,526)*.

With respect to **Claims 9 and 28**, Gong teaches the speech recognition model adaptation system having microphone *(Fig. 1, Element 11)*, speaker *(Fig. 1, Element 15)*, and environmental noise data processing portions, as applied to Claims 1 and 21, while Cilurzo teaches a network-based speech recognition system server *(Col. 3, Line 38- Col. 4, Line 32)*.

Gong and Cilurzo are analogous art because they are from a similar field of endeavor in

speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at

the time of invention, to modify the teachings of Gong with the speech recognition network

server as taught by Cilurzo in order to provide multiple users with access to a speech recognizer

having a capacity that can be expanded dynamically *(Cilurzo, Col. 2, Lines 22-51)*.

With respect to **Claims 12 and 32**, Gong teaches the speech recognition model

adaptation system utilizing microphone, speaker, and environmental noise data, as applied to

Claims 1 and 21. Gong does not teach the ability to select a specific speech recognition network,

however Cilurzo teaches such a selection ability *(Col. 5, Lines 4-26)*.

Gong and Cilurzo are analogous art because they are from a similar field of endeavor in

speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at

the time of invention, to modify the teachings of Gong with the ability to select a specific speech

recognition network as taught by Cilurzo in order to provide multiple users with access to a

speech recognizer having a capacity that can be expanded dynamically *(Cilurzo, Col. 2, Lines*

22-51).

With respect to **Claim 20**, Cilurzo teaches the user account information as applied to

claim 11.

9.   **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gong in view of

Heck et al *(U.S. Patent: 5,950,157)*, and further in view of Cilurzo et al.

With respect to **Claim 10**, Gong teaches the speech recognition model adaptation system

utilizing microphone, speaker, and environmental noise data, as applied to Claim 1. Gong does

not specifically teach a means of updating a speaker model to reflect a specific type of

communications device, however Heck teaches such an updating means *(Col. 9, Line 30- Col.*

10, Line 48).

Gong and Heck are analogous art because they are from a similar field of endeavor in

speech recognition model adaptation. Thus, it would have been obvious to a person of ordinary

skill in the art, at the time of invention, to modify the teachings of Gong with speaker recognition

model adaptation means taught by Heck in order to implement a robust speaker recognition

system that can function in the presence of handset mismatches *(Heck, Col. 2, Lines 5-9).*

Gong in view of Heck do not teach speech recognition processing performed at a server,

however Cilurzo teaches a speech recognition server *(Col. 3, Lines 38- Col. 4, Line 32).*

Gong, Heck, and Cilurzo are analogous art because they are from a similar field of

endeavor in speech recognition. Thus, it would have been obvious to a person of ordinary skill

in the art, at the time of invention, to modify the teachings of Gong in view of Heck with the

speech recognition network server as taught by Cilurzo in order to provide multiple users with

access to a speech recognizer having a capacity that can be expanded dynamically *(Cilurzo, Col.*

2, Lines 22-51).

10.   **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gong in view of

Hoffberg et al *(U.S. Patent: 5,875,108).*

With respect to **Claim 14**, Gong teaches the speech recognition model adaptation system

utilizing microphone, speaker, and environmental noise data, as applied to Claim 13. Gong does

not teach the identification of a device according to an RF ID tag, however Hoffberg teaches

such a means for device identification (Col. 80, Line 37- Col. 81, Line 9).

Gong and Hoffberg are analogous art because they are from a similar field of endeavor in

speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at

the time of invention, to modify the teachings of Gong with the RF ID tag taught by Hoffberg in

order to provide a means for automatic user identification *(Hoffberg, Col. 80, Line 37- Col. 81,*

Line 9).

11.   **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gong in view of

Byers *(U.S. Patent: 6,219,645).*

With respect to **Claim 16**, Gong teaches the speech recognition model adaptation system

utilizing microphone, speaker, and environmental noise data, as applied to Claim 13. Gong does

not specifically suggest a plurality of microphones that are initiated as an end user walks in

between the microphones, however Byers teaches such a plurality of microphones *(Col. 3, Lines*

11-35; Col. 4, Line 66- Col. 5, Line 12; and Col. 12, Lines 30-56).

Gong and Byers are analogous art because they are from a similar field of endeavor in

speech recognition. Thus, it would have been obvious to a person of ordinary skill in the art, at

the time of invention, to modify the teachings of Gong with the multiple microphone speech

recognition system taught by Byers in order to allow a user to control multiple ASR devices

while providing mobility through a room or environment *(Byers, Col. 1, Line 65- Col. 2, Line 7).*

12.   **Claims 17 and 30-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gong in view of Heck et al *(U.S. Patent: 5,950,157)*.

With respect to **Claims 17 and 30**, Gong teaches the speech recognition model

adaptation system utilizing microphone, speaker, and environmental noise data, as applied to

Claim 13. Gong does not specifically suggest that the microphone (transducer) data is a

distortion value based on a difference between an actual transducer and a response characteristic

of a training transducer, however Heck teaches such a distortion value that relates to transducer

data *(Col. 10, Lines 9-48)*.

Gong and Heck are analogous art because they are from a similar field of endeavor in

speech recognition model adaptation. Thus, it would have been obvious to a person of ordinary

skill in the art, at the time of invention, to modify the teachings of Gong with the transducer

distortion scores taught by Heck in order to implement a robust speaker recognition system that

can function in the presence of handset mismatches *(Heck, Col. 2, Lines 5-9)*.

With respect to **Claim 31**, Gong teaches the speech recognition model adaptation system

utilizing microphone, speaker, and environmental noise data, as applied to Claim 21. Gong does

not specifically teach a means of updating a speaker model to reflect a specific type of

communications device, however Heck teaches such an updating means *(Col. 9, Line 30- Col.

10, Line 48)*.

Gong and Heck are analogous art because they are from a similar field of endeavor in

speech recognition model adaptation. Thus, it would have been obvious to a person of ordinary

skill in the art, at the time of invention, to modify the teachings of Gong with speaker recognition

·model adaptation means taught by Heck in order to implement a robust speaker recognition

system that can function in the presence of handset mismatches *(Heck, Col. 2, Lines 5-9)*.

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

Rose et al *(U.S. Patent: 5,765,124)*- teaches a method for speech recognition model

adaptation based on transducer data.

Yamaguchi et al *(U.S. Patent: 6,026,359)*- teaches a system that adapts speech

recognition models based on environmental noise conditions.

Chiang *(U.S. Patent: 6,188,982)*- teaches a method for noise model adaptation.

Balakrishnan et al *(U.S. Patent: 6,182,038)*- teaches a cellular telephone based system

having acoustic and language models that adapt to changes in voice, environment, and the use of

language.

Teunen et al *(U.S. Patent: 6,233,556)*- teaches a method for adapting speech recognition

models for different types of cellular telephony equipment.

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632.

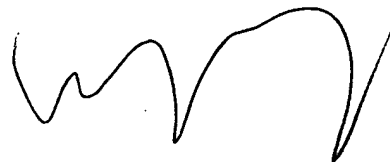The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W. R. YOUNG
PRIMARY EXAMINER

James S. Wozniak
9/26/2005